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May 16, 1996

Mr. William F. Caton, Acting Secretary
Federal Communications Commission
Room 222
1919 M Street, N.W.
Washington, D.C. 20554

RE: Opposition of Motorola Satellite Communications, Inc. to the Petitions for Reconsideration in CC Docket 92-166

Dear Mr. Caton:

On behalf of Motorola Satellite Communications, Inc. please find enclosed for filing an original and four (4) copies of its opposition to the petitions to deny in the above-captioned matter in response to Public Notice 2128 dated April 17, 1996. In accordance with the Notice, this Opposition is due on May 16, 1996.

We request that you place this pleading in the appropriate public file and forward this copies to the International Bureau for its consideration.

Please date stamp and return our copy marked "Duplicate Original" to the messenger. If there are any questions concerning this filing, please do not hesitate to contact the undersigned.

Respectfully submitted,

Philip L. Malet
Brent H. Weingardt
Counsel for Motorola Satellite Communications, Inc.

Enclosure

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OFFICE OF SECRETARY

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of:	)	
Amendment of the Commission's Rules to Establish Rules and Policies Pertaining to a Mobile Satellite Service in the 1610-1626.5/2483.5-2500 MHz Frequency Bands	)	CC Docket No. 92-166

OPPOSITION OF MOTOROLA TO PETITIONS FOR RECONSIDERATION

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May 16, 1996

SUMMARY

Motorola Satellite Communications, Inc. ("Motorola") hereby opposes the petitions of ARINC, Loral/Qualcomm and TRW, Inc. in response to the Commission's Memorandum Opinion and Order in this proceeding. Motorola fully supports the Commission's decision not to impose an interim band plan to protect the Russian Federation's Global Navigation Satellite System ("GLONASS") in the United States.

Motorola agrees with the Commission that there remains "substantial uncertainty" that GLONASS will ever be part of a certified system to provide precision landing services for civil aircraft in the United States.[1/] As such, it is highly unlikely that GLONASS will require protection from MSS mobile earth terminal uplinks in the U.S. Even if GLONASS is ever used for such services, it would not be in other than its final configuration at frequencies below 1606 MHz. The petitions raise no new facts or relevant circumstances that justify further reconsideration and the uncertainty that it brings. The Commission should reject these petitions for the following reasons:

FIRST, ARINC ignores the fact that the Commission adopted an interim sharing plan for a very limited purpose.

> Specifically, if GLONASS is used in conjunction with the U.S. Global Positioning System (GPS) to provide aircraft precision approach and terminal communications, as contemplated by the Federal Aviation Administration, MSS would not be able to operate in the shared band because of the potential for MSS mobile terminal interference into GLONASS mobile receivers.[2/]

1/ Big LEO Reconsideration Order at ¶ 14.

2/ Big LEO Report and Order at 5956-5957 (footnotes deleted) (emphasis added).

ARINC alleges two new facts that justify further reconsideration of the Commission's decision: the completion of the GLONASS constellation and an agreement reached with ICAO for its use in the Global Navigation Satellite System. Neither of these facts or developments were unexpected by the Commission at the time of either its Big LEO Reconsideration Order or its Big LEO Report and Order. More importantly, neither fact is material or relevant to the issue of whether GLONASS will ever be provide precision approach and landing services in the United States. ARINC's petition is repetitious and should be dismissed by the Staff. Likewise, TRW's petition raises no new facts and should be dismissed as repetitious.

SECOND, available statements of the Department of Transportation and the FAA suggest that it is even more unlikely today that GLONASS will be used for precision landing or terminal operations in the near term or that it will require protection in other than its final configuration. The Department of Transportation's' most recent Federal Radionavigation Plan (FRP) makes scant mention of GLONASS.[3/] The FRP indicates that the Global Positioning System augmented by a Wide Area Augmentation System (WAAS) is and will be the primary component of the FAA's precision approach navigation system.[4/] Furthermore, in a recent planning document presented to ICAO, GLONASS is not included in any aspect of the FAA's plans for future aids to precision approach and landing in the United States. In addition, it is highly unlikely that the FCC would not be aware of any concrete plans that the FAA has to certify GLONASS

3/ 1994 Federal RadioNavigation Plan, 8th Edition, released May 1995.

4/ Id. at 4-5.

use in the U.S. since the two agencies have an explicit agreement to share information on this matter.

THIRD, contrary to ARINC's claims, the United States is under no international obligation other than RR 731E to protect GLONASS in other than its final configuration. RR731E does not require that the U.S. maintain an interim band plan nor must the U.S. do so to comply with its international commitments based on WARC-92, WRC-95 the Convention on International Civil Aviation or other international agreements.

FINALLY, Contrary to TRW's assertion, it is premature to assume any results from the RTCA. Unless and until such protection levels are established for GLONASS/GPS operations in the U.S., it would also be premature to impose any interim band plan.

Motorola understands that Loral/Qualcomm does not support reimposition of the interim band plan. Moreover, Motorola understands that Loral/Qualcomm believes that TDMA licensees should have access to a full 5.15 MHz of spectrum in the MSS band. The appropriate resolution of the GLONASS issue then is not to diminish the bandwidth available to the MSS licensees, but to adopt an out-of-band emissions limit that preserves the full 1610-1626.5 MHz band for MSS systems. The Commission will have more than ample time to resolve this issue through a future rulemaking if and when the FAA concludes that GLONASS should be used for precision approach and lands in U.S. airspace.

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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of:	)	
Amendment of the Commission's Rules to Establish Rules and Policies Pertaining to a Mobile Satellite Service in the 1610-1626.5/2483.5-2500 MHz Frequency Bands	)	**CC Docket No. 92-166**

OPPOSITION TO PETITIONS FOR RECONSIDERATION

Motorola Satellite Communications, Inc. ("Motorola") hereby opposes the petitions for reconsideration filed in response to the Commission's Memorandum Opinion and Order released in the above-captioned proceeding.[1/] Motorola fully supports the Commission's decision not to impose an interim band plan to protect the Russian Federation's Global Navigation Satellite System ("GLONASS") in the United States. Motorola agrees with the Commission that there remains "substantial uncertainty" that GLONASS will ever be part of a certified system to provide precision landing services for civil aircraft in the United States. Thus, it is highly unlikely that GLONASS will require protection from MSS mobile earth terminals in the U.S.

1/ Memorandum Opinion and Order in CC Docket 92-166, FCC 96-54, February 15, 1996. ("Big LEO Reconsideration Order"). Aeronautical Radio, Inc. ("ARINC") filed a Petition for Reconsideration ("ARINC Petition") and TRW, Inc. filed a Petition for Further Reconsideration ("TRW Petition") on April 11, 1996. L/Q Licensee, Inc. ("Loral/Qualcomm") filed a Petition for Clarification ("Loral/Qualcomm Petition") on the same date. These petitions were published in the Federal Register on May 1, 1996. 61 F.R. 19295 (May 1, 1996).

Moreover, even if GLONASS is ever used for such services, it would not be in other than its final configuration.[2]

Nothing raised by the petitions suggest otherwise. In fact, TRW and Loral/Qualcomm, are on record as opposed to the interim band plan.[3] ARINC's arguments are ripe with inconsistencies and irrelevant claims and should be disregarded by the Commission.

In fact, existing evidence further supports the Commission's finding of "substantial uncertainty" as to the implementation of GLONASS in the U.S. for precision approaches and landings. Petitioners do not demonstrate that the Commission's informed decision is incorrect. Accordingly, the Commission should deny the subject petitions.

I. BACKGROUND

In 1995, the Commission authorized Motorola to construct, launch and operate a constellation of 66 low-Earth orbiting (LEO) satellites in the Mobile-Satellite Service ("MSS") called the IRIDIUM® System.[4] Consistent with its "Big LEO" rules adopted three months earlier,[5] the Commission informed Motorola that standards were

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2/ Big LEO Reconsideration Order at ¶ 14.

3/ Loral/Qualcomm Comments in CC Docket 92-166 (December 20, 1994); Joint Proposal and Supplemental Comments in CC Docket 92-166 (September 9, 1994).

4/ Application of Motorola Satellite Communications, Inc. for Authority to Construct, Launch and Operate a Low Earth Orbit Satellite System in the 1616-1626.5 MHz Band, Order and Authorization, 10 FCC Rcd 2268 (Int'l Bureau 1995).

5/ Amendment of the Commission's Rules to Establish Rules and Policies

(continued ...)

under development to assure that MSS earth terminals would co-exist with the Global Positioning System ("GPS") and Global Navigation Satellite System ("GNSS") in adjacent bands.[6/] The Commission also conditioned Motorola's use of the 1621.35-1626.5 MHz band on its interim sharing plan ("interim band plan") and any revisions to the plan in response to the then pending petitions for reconsideration.[7/]

In its Big LEO Report and Order, the Commission had adopted an interim band plan for a very limited purpose

> [I]nterference problems between MSS and certain proposed applications on GLONASS.... will not permit co-frequency co-system coverage in the United States and internationally in the 1610-1616 MHz band. Specifically, if GLONASS is used in conjunction with the U.S. Global Positioning System (GPS) to provide aircraft precision approach and terminal communications, as contemplated by the Federal Aviation Administration, MSS would not be able to operate in the shared band because of the potential for MSS mobile terminal interference into GLONASS mobile receivers . . . [We] were encouraged that even if GLONASS were ultimately used to provide services incompatible with MSS, the GLONASS final frequency plan would be changed to bands below 1606 MHz only, making the 1610-1616 MHz band available for MSS operations....[If] a GLONASS transition to bands below 1606 MHz [were] not completed when the first MSS satellites are launched in the late 1990's .... we would need to develop a transitional plan for MSS migration into the vacated 1610-1616 MHz band with MSS licensees on less than the full amount of their assigned spectrum during the initial phases of their operation.[8/]

5/ (... continued)
Pertaining to a Mobile Satellite Service in the 1610-1626.5/2483.5-2500 MHz Frequency Bands, Report and Order, 9 FCC Rcd 5936 (1994) ("Big Leo Report and Order").

6/ Motorola Satellite Communications, 10 FCC Rcd 2272 ¶ 21 (1995).

7/ Erratum, 10 FCC Rcd 3925 (1995).

8/ Big LEO Report and Order at 5956-5957 (footnotes deleted) (emphasis added).

Motorola has consistently opposed any interim band plan as a potential solution to what must be considered only a potential GLONASS interference problem in the future.[9/]

As Motorola and Loral/Qualcomm have stated in this proceeding, imposition of an interim band plan is unnecessary. It is highly unlikely that in the near term the FAA will certify GLONASS for precision aircraft approaches in U.S. airspace. As the Commission has noted, "it is possible that the FAA will decide not to use GLONASS until it shifts its frequencies to its final configuration...."[10/] Motorola went on to urge that the Commission should, at a minimum, defer consideration of an interim plan until GLONASS is affirmatively certified into the U.S. Federal Radionavigation Plan to provide precision approaches.[11/] Moreover, Motorola agreed with Loral/Qualcomm that no harmful interference would be caused by MSS mobile terminals to either GPS or GLONASS receivers in their final configuration and, that at a minimum, the Commission should defer consideration of any interim plan until the RTCA Working Group has recommended MSS/GLONASS protection criteria.[12/] Rather than creating an a priori band sharing plan, the Commission should, as Motorola urged,

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9/ See in general, Motorola's Petition For Clarification and Partial Reconsideration in CC Docket 92-166, 6-15 (November 21, 1994) ("Motorola Petition"); Motorola's Consolidated Comments to the Petitions For Partial Reconsideration and Clarification, 7-9 (December 20, 1994) ("Motorola Comments"); Motorola's Consolidated Reply Comments, 1-4 (January 5 1995) ("Motorola Reply").

10/ Motorola Petition at 7-8 quoting Big LEO Report and Order at 5958 n.62.

11/ Id. at 7.

12/ Motorola Comments at 8.

establish an appropriate out-of-band emissions standard for MSS uplinks that would avoid any need for a guard band between MSS and GLONASS operations.[13/]

Motorola further explained that the United States had agreed to protect GLONASS in U.S. airspace only as to its "final carrier frequency configuration" and to take all practicable steps to reduce mutual interference to an acceptable level in the interim period. Motorola concluded, and no party disagreed, that it would not be practicable for U.S. MSS systems to avoid causing potential interference to GLONASS-M receivers during aircraft approaches and landings unless and until the Russian Federation implements the final configuration of the GLONASS-M system.[14/]

The Commission carefully reviewed these and other comments on reconsideration of its Big LEO Report and Order, and correctly concluded that an interim band plan would not be necessary at this time. Further reconsideration of this decision with no new data is repetitious, places undue uncertainty on Big LEO system planning and construction and does not serve the public interest.

13/ Motorola Petition at 10; Motorola Reply at 2.

14/ Motorola Petition at 11-12; Motorola Reply at 2.

II. THE FURTHER PETITIONS FOR RECONSIDERATION RAISE NO NEW FACTS NOT AVAILABLE TO THE COMMISSION AND SHOULD BE DISMISSED

ARINC raises alleged "new facts" that it claims justify further reconsideration of the Commission's decision to eliminate the interim band plan. First, it notes that GLONASS is fully operational as of January 18, 1996. Second, it claims that GLONASS was incorporated into the GNSS by the International Civil Aviation Organization ("ICAO") on March 14, 1996.[15/] Neither of these developments were wholly unexpected by the Commission at the time of either its Big LEO Reconsideration Order or its Big LEO Report and Order.[16/] More importantly, neither fact is material or relevant to the issue of whether there will ever be GLONASS operations for precision landings in the United States that will require protection. Accordingly, ARINC's petition should be dismissed by the Commission.

ARINC misstates the FCC's Big LEO Reconsideration Order in order to recast the issue confronting the Commission. Since 1994, the basis for the FCC's interim band plan has not been, as ARINC would have it, whether GLONASS will be incorporated into GNSS, but whether GLONASS would be providing particular services in U.S. airspace that would conflict with MSS mobile transceiver uplinks. This is clear from a full reading of the FCC's explanation as to the reason for an interim band plan:

> In the Big LEO Order, the Commission determined that if GLONASS is incorporated into a system for aeronautical navigation, and particularly for aircraft precision approach

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15/ ARINC Petition at 6

16/ See Big LEO Report and Order at 5956 n.57.

and terminal communications, protection of GLONASS operations in the U.S. might be required.[17/]

Elsewhere, in the Big LEO Report and Order, the Commission's concern with the inability of MSS systems to coexist with GLONASS before its migration to frequencies below 1606 MHz is based upon uncertainty as to "the extent to which domestic and international civil aeronautical agencies and organizations (such as ICAO) [will] use GLONASS to provide approach and terminal communications."[18/]

ARINC has raised no new facts pertaining to the specific MSS/GLONASS interference concerns to warrant a reversal of the Commission's current position regarding the probability of GLONASS's participation in precision approaches in the U.S. As such, its petition should be summarily dismissed. Section 1.429(i) of the Commission's Rules allows for further reconsideration of any order disposing of a petition for reconsideration that modifies rules adopted by the original order. However, a further petition for reconsideration may be dismissed as repetitious if the alleged "new facts" were known or anticipated by the Commission at the time of its decision. In any event, any such alleged new facts have no bearing on the issue of GLONASS's use for precision landings in the United States.[19/]

[17/] Big LEO Reconsideration Order at ¶ 12 (emphasis added). See also, Big LEO Report and Order at 5951.

[18/] Big LEO Report and Order at 5957-5958; see also, id. at 5956 n.57. (FAA and ICAO are investigating using GLONASS and GPS in a joint GNSS to support civil aviation with the integrity to provide for precision approach landings).

[19/] The additional facts raised by ARINC at pages 7-8 of its petition are equally irrelevant. ARINC fails to explain how ICAO's development of SARPs and MOPs for GLONASS; RTCA's development of MOPS for GLONASS "down to non-precision approach altitudes"; and the President's Directive on GPS will have any bearing on the FAA's certification of GLONASS in the U.S. for precision landings.

TRW bases its arguments for further reconsideration on the lack of changed circumstances since the Big LEO Report and Order. As such, it has not even made a colorable claim of new facts that justify a request for further reconsideration. Thus, its petition fails to meet the requirements of Section 1.429(i) of the Rules and should be dismissed.

Repetitive pleadings like ARINC's and TRW's add unnecessary delay and uncertainty to new radio services such as Big LEO MSS. As the Commission has noted, "[l]ack of finality to the administrative process can negatively affect [an] industry's ability and incentive to plan and make investment decisions. . . ."[20/] The Commission has focused on this particular issue for over two years and it is time for the Commission to move on to more important matters.

III. ARINC HAS IDENTIFIED NO NEW FACTS WHICH JUSTIFY PROTECTION OF GLONASS IN OTHER THAN ITS FINAL CONFIGURATION

ARINC can point to no new facts or record evidence suggesting that GLONASS will be used for precision approach and landings in the U.S. In fact, available statements by the Department of Transportation and FAA suggest just the opposite. Without the imminent implementation of GLONASS in the U.S. for precision approaches and landings, it is unnecessary for the FCC to protect GLONASS in other than its final configuration. Nor has ARINC demonstrated that the Commission is under any international obligation to maintain an interim band plan.

20/ MTS and WATs Market Structure, 97 FCC 2d 834, 879 (1984).

A. ARINC Has Not Demonstrated That There Will Ever Be a Need to Protect GLONASS in the United States in Other Than its Final Configuration

The ARINC petition is devoid of any facts that contradict the Commission's conclusion that there is "substantial uncertainty" that GLONASS will ever require protection in the United States in other than its final configuration.[21/]

First, the harmful interference scenario identified by the Commission -- use of GLONASS in the U.S. for precision approach and terminal communications -- is no closer to reality today than when the Commission released its Big LEO Report and Order. In fact, there is absolutely no indication that the FAA has any plans, let alone near term plans, to incorporate GLONASS along with GPS in the United States.

The Department of Transportation's' most recent Federal Radionavigation Plan (FRP) makes scant mention of GLONASS.[22/] The FRP indicates that GPS will be the primary satellite constellation for navigation during early GNSS implementation.[23/] The FRP then notes that the FAA is conducting research on the possible combination in a hybrid receiver of GPS/GLONASS signals that may be certified to meet radionavigation performance standards in an aircraft conducting en route and terminal

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21/ Big LEO Reconsideration Order at ¶ 14.

22/ 1994 Federal RadioNavigation Plan, 8th Edition, released May 1995. The FRP is the "official source of radio navigation policy and planning for the Federal Government..." Letter of Promulgation of Secretary of Defense William J. Perry and Secretary of Transportation Federico Pena.

23/ FRP at 4-5.

area operations, including nonprecision approach."[24] As to precision approach and landing, the FRP states that:

> Local-area DGPS systems, ILS, GLONASS and other navigation sources and sensors may play roles of varying significance in the far-term precision approach architecture.[25]

In a planning document presented to the ICAO COM/OPS meeting just last year, GLONASS is not included in any aspect of the FAA's plans for future aids to precision approach and landing in the United States. The United States informed ICAO that the FAA is moving toward implementing Wide Area Augmentation System ("WAAS") that will be augmenting GPS beginning in 1997 as a "Category I" precision landing method.[26] There is no mention of GLONASS in any of these precision approach and landing plans. (This paper is included at Attachment 1).

There is also no reason to conclude that the FCC is not aware of current FAA thinking concerning GLONASS. In November, 1994, the FCC, NTIA and the FAA signed a Memorandum of Understanding (MOU) to facilitate technical standards for compatible use of MSS transceivers and GLONASS operations. The MOU commits the FAA to keep the FCC informed on this very subject:

> The FAA will inform, in a timely manner, NTIA and the FCC of any significant activities, decisions, standards and proceedings that advance/progress the implementation of

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[24] FRP at 4-15 (emphasis added).

[25] FRP at 4-17 (emphasis added).

[26] ICAO: Special Communications/Operations Divisional Meeting (1995): Working Paper 74.

GNSS in the United States, in particular for precision approach and landing and terminal area operations.[27/]

Consistent with these facts neither ARINC nor the other petitioners can point to any new evidence as to the FAA's imminent adoption of GLONASS into any configuration in the U.S.

ARINC regards ICAO's recent agreement with GLONASS as evidence of the immediate need to reinstitute the interim band plan. As Motorola noted earlier, this action is wholly irrelevant to GLONASS's future use in the U.S. for precision landings. Significantly, ARINC can only claim that the RTCA is developing minimum operational performance standards (MOPS) for U.S. domestic GLONASS use and certification "down to non-precision approach altitudes."[28/] Again, ARINC can provide no evidence to contradict the FAA's indication at the ICAO COM/OPTs meeting that GPS and ILS will be the basis for CAT I navigation in U.S. airspace[29/] nor the Commission's finding that there is still "substantial uncertainty" as to whether GLONASS will require interim protection in the United States.

Last, ARINC suggests that the President's recent decision on the commercial use of GPS with temporary selective availability will stimulate use of GLONASS with GPS, at least in the short term.[30/] However, ARINC reaches

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27/ Memorandum of Understanding Between the Federal Communications Commission, National Telecommunications and Information Administration and Federal Aviation Administration Addressing Out-of-Band Emission Requirements for the Mobile-Satellite Service, November 18, 1994.

28/ ARINC Petition at 7

29/ ICAO Working Paper 74.

30/ ARINC Petition at 8

conclusions with no supporting evidence. Since the FAA has no immediate plans to incorporate GLONASS into its precision navigation systems and GPS is likely to become a world-wide standard, even with its interim selective availability,[31/] ARINC's wishful thinking is at odds with reality.

B. The Commission Has No International Obligation to Protect GLONASS in the United States Through An Interim Band Plan

Contrary to ARINC's claims, the United States is under no international obligation, other than RR731E, to protect GLONASS in other than its final configuration below 1606 MHz. Furthermore, the U.S. is not mandated or required, as ARINC recognizes, to maintain an interim band plan to comply with its international commitments based on WARC-92, WRC-95, the Convention on International Civil Aviation or other international agreements.

ARINC first implies that the U.S. agreed at WRC-92 to ITU Radio Regulation 731E that would protect any operations of the aeronautical radio and navigation service.[32/] This is simply not the case. In 1992, the Global Navigational Satellite System (GNSS) was viewed only as an en route navigation aid and RR731E,[33/] adopted in conjunction with this allocation, established quantitative protective limits for co-frequency use of MSS terminals with GLONASS for en route navigation. More

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31/ See, e.g., "GIA [GPS International Association] Meeting Focuses on Policy, GPS Constellation Status," Global Positioning & Navigation News, April 18, 1996; "Finding Profit in Aiding the Lost," New York Times, page 1, March 5, 1996; "What WAAS Will Be," Air Transport World, page 51, September, 1995.

32/ ARINC Petition at 3

33/ Renumbered and modified S 5.364 at WRC-95.

importantly, ARINC either ignores or overlooks the recent modification to RR731E that shifts the burden of causing interference away from MSS terminals. First, WRC-95 eliminated the cited portion of RR731E that "stations of the mobile-satellite service shall not cause harmful interference to" the aeronautical radio navigation service.[34/] Second, WRC-95 replaced that clause to RR731E with one that provides the FCC with significant flexibility in resolving MSS/GLONASS interference issues.

> Administrations responsible for the coordination of mobile-satellite networks shall make all practicable efforts to ensure protection of stations operating in accordance with the provisions of S5.366.[35/]

ARINC does not claim -- nor can it claim -- that the FCC lacks the authority under the newly-revised RR 731E (S5.364) to reject the use of an interim band sharing plan. In fact ARINC only suggests that "coordination alone might not protect the use of GLONASS.[36/]

ARINC next summarily concludes that the Commission will violate the 1947 Convention on International Civil Aviation (the "Chicago Convention") if it does nothing more than coordinate with GLONASS operations in the United States.[37/] ARINC's conclusion reflects a misreading of the Chicago Convention.

[34/] The provision now reads, in part, as follows: "Stations of the mobile-satellite service shall not claim protection from stations in the aeronautical radionavigation service...."

[35/] Final Acts of the World Radio Conference (WRC-95), Geneva, November 17,1 995, MOD S 5.364.

[36/] ARINC Petition at 8

[37/] ARINC Petition at 8 9.

First, while Motorola readily agrees with the truism that non-U.S. aircraft generally have the right (subject to conditions described in the Chicago Convention) to operate in U.S. airspace,[38] these aircraft have no right to use navigational devices of their own choosing. Article 11 of the Chicago Convention expressly provides that the laws and regulations of the United States pertaining to the operation and navigation of aircraft in its territory must be complied with by such aircraft entering U.S. territory.[39] Therefore, until the FAA has certified GLONASS for use within the Untied States, no non-U.S. aircraft may operate in the U.S. in whole or part with GLONASS as a navigational aid.[40]

ARINC is also incorrect in claiming that ICAO SARPs have the force of law within the United States.[41] Article 37 does not, as ARINC claims, transform a completed SARP into U.S. law, but exhorts the U.S. (as a Contracting State) to collaborate in securing the highest practicable degree of uniformity in regulations, standards and procedures [42] Article 38 then expressly provides that a Contracting

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38/ Chicago Convention at Chapter II, Articles 5 and 6.

39/ Chicago Convention at Chapter II, Article 11; See also, Article 12 on national rules of flight and maneuver.

40/ Contrary to ARINC's claim, Motorola is unaware of any aircraft, other than the Russian military, that intends to use GLONASS as a sole means of navigation. Moreover, no aircraft, including the Russian military, could use GLONASS, or GPS, or both in combination without further augmentation, as a sole means of navigation for precision approaches, which is the only GLONASS interference issue before the Commission. In any event Russian military aircraft, not being civil aircraft, are not covered by the Chicago Convention and have no right under international law to fly in U.S. airspace.

41/ ARINC Petition at 9

42/ Chicago Convention at Chapter VI, Article 37.

State may reject any international standard it finds impracticable merely by notifying ICAO of that fact.[43] ARINC's reading of the Chicago Convention is clearly at odds with its express language and in no way implicates the FCC's decision not to maintain an interim band plan.

Finally, Motorola is unaware of any bilateral agreement with the Russian Federation that requires the protection of GLONASS in other than its final configuration. As Motorola argued in its 1994 petition for partial reconsideration of the Commission's Big LEO Report and Order:

> Motorola understands that the United States has agreed with the Russian Federation to complete ITU coordination only as to the "final carrier frequency configuration" of GLONASS-M, which encompasses Channels -7 to +6 with Channels 5 and 6 being used only as technical frequencies and only then when the satellites are within view of Russia. The parties further agreed that mutual interference between U.S. MSS systems and GLONASS-M could arise, but that both Administrations would take all practicable steps to reduce mutual interference to an acceptable level.
>
> These agreements and understandings do not require, as Motorola understands them, that the United States limit MSS operations within the United States in order to protect GLONASS-M receivers operating at or near the 1610 MHz band edge. Rather, any steps implemented to avoid "mutual interference" must be "practicable" under the circumstances. Motorola submits that until the Russian Federation implements the final configuration of the GLONASS-M system, it would not be practicable for U.S. MSS systems to avoid causing potential interference to GLONASS-M receivers during aircraft approaches and landings, unless appropriate out-of-band emissions limits are placed on all MSS systems. Otherwise, there simply will

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[43] Chicago Convention at Chapter VI, Article 38.

not be sufficient spectrum for U.S. MSS systems to operate in and still serve the needs of their customers.[44/]

IV. IT IS PREMATURE TO CONSIDER ANY RTCA RECOMMENDATION ON PROTECTION OF GLONASS

Contrary to TRW's assertion, it is premature to assume any results from the RTCA. While the FAA and various aviation interests have proposed MSS out-of-band protection levels, there appears to be no consensus within the RTCA as to the requisite level. Unless and until such protection levels are established for GLONASS/GPS operations in the U.S., it is premature to impose any interim band plan solution. Accordingly, the Commission should deny TRW's petition.[45/]

Motorola does not understand Loral/Qualcomm's petition as requesting the reimposition of the Commission's interim band plan. Loral/Qualcomm has consistently opposed an interim frequency plan that is based on a perceived need to protect GLONASS receivers in the United States. In fact, Motorola understands that Loral/Qualcomm believes that TDMA licensees should have access to a full 5.15 MHz of spectrum in the band, consistent with the terms of the Big LEO Report and Order. The proper resolution of the GLONASS issue is not to diminish the bandwidth available

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[44/] Motorola Petition at 11-12; see, also, Motorola Reply at 2.

[45/] Motorola agrees with one aspect of the TRW Petition. TRW voices concern over the Commission's seeming willingness to deal with other Administration's GLONASS concerns on an ad hoc basis. TRW Petition at 7. Motorola understands the need to coordinate with other Administrations who choose to protect GLONASS. However, Motorola urges the Commission not to impose an a priori version of its band plan as a global solution. Each country is responsible for resolving GLONASS/MSS interference in the manner it sees fit. The Commission need not and should not interfere with the sovereign rights of other nations by suggesting that it will distribute the burden among all Big LEO MSS licensees irrespective of the cause of the interference condition.

to any licensee, but rather to adopt the out-of-band emissions limit that meets the requirements of the world's air navigation systems and preserves the availability of the full 1610-1626.5 MHz band for MSS systems.

Prior to receiving notice from the FAA of GLONASS's future use in U.S. radionavigations systems, the Commission need not resolve interference issues with an interim band plan. The GLONASS/MSS mobile earth station interference problem, if it is ever to occur, would hapoen during CAT I precision instrument approaches and landings. The FAA has told ICAO that until the year 2010, CAT I precision approaches in U.S. airspace will use GPS plus WAAS and/or ILS.[46/]

If for some unforeseen reason, the FAA changes its policy in the future and decides to employ GLONASS augmented GPS/WAAS for CAT I precision approaches in U.S. airspace, the Commission will have ample opportunity to initiate and implement a rulemaking proceeding to establish standards for protecting GLONASS in the U.S. Even after such a policy shift, the FAA will require significant lead time to design and implement procedures and to certify equipment and infrastructure leading to the ultimate certification of GLONASS for use in U.S. precision approaches and landings. In that future rulemaking, the Commission will have the opportunity to review and consider the then-current technologies in the GNSS and MSS industries in fashioning any GLONASS/MSS sharing solution.

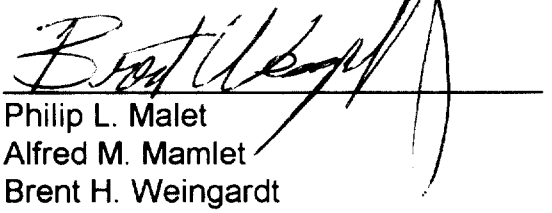
[46/] ICAO Working Paper 74. The FAA has stated that ILS can be used in the United States for CAT II/III landings indefinitely, but current FAA plans are to phase them out in the period 2005 to 2010 assuming development of local differential GPS proves a satisfactory replacement.

V. CONCLUSION

Motorola agrees with the Commission that there remains "substantial uncertainty" as to whether GLONASS will ever be used for precision approaches and landings in the United States. In the face of this continuing uncertainty, the Commission was correct to eliminate its interim band sharing plan that would needlessly harm the development of Big LEO MSS operations within the United States. ARINC and TRW have presented no new facts justifying further reconsideration and their petitions should be summarily dismissed.

Respectfully submitted,

MOTOROLA SATELLITE COMMUNICATIONS, INC.



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May 16, 1996

ENGINEERING CERTIFICATE

I hereby certify that I am the technically qualified person responsible for preparation of the engineering information contained in the foregoing "Motorola Opposition to Petitions For Reconsideration" in the Commission's proceeding to Establish Rules and Policies Pertaining to a Mobile Satellite Service in the 1610-1626.5 /2483.5-2500 MHz Frequency Band. I am familiar with the Commission's Rules concerning Part 25 and satellite earth station matters. I have prepared or reviewed the engineering information contained in these pleadings and the statements of fact made therein are true and correct to the best of my personal knowledge.

Dated this 14th of May, 1996

By: _____

Charles Bucher
Member Technical Staff
Spectrum and Standards
Motorola Satellite Communications